

RESPONSE TO NOTICE OF NON-COMPLIANT AMENDMENT
U.S. Application No. 10/612,394

Q76423

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A liquid ejection control method for controlling ejection of liquid from nozzles arranged in a predetermined feed direction, the nozzles for ejecting liquid onto a medium that is fed in said feed direction, comprising the following steps:

a step of detecting a portion of said medium that is positioned on an upstream side in said feed direction; and

after detecting the portion of said medium that is positioned on an upstream side in said feed direction, a step of ejecting liquid from a predetermined number N of nozzles from among a plurality of nozzles that are located in opposition to a groove provided in a platen;

wherein N is always greater than 0 and wherein N is decreased in accordance with an increase in a total feed amount of the medium after the portion of said medium that is positioned on the upstream side in said feed direction has been detected

~~a step of making a nozzle located most upstream in said feed direction, and nozzles within a predetermined distance in the feed direction from the most upstream nozzle, not eject liquid based on a result of said detection;~~

~~wherein said predetermined distance is increased in correspondence with an increase of an aggregate paper feed amount of said medium after said portion of said medium that is positioned on the upstream side in said feed direction has been detected.~~

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2 (cancelled).

3. (previously presented): A liquid ejection control method according to claim 1,
wherein after said portion of said medium that is positioned on the upstream side in said
feed direction has been detected,

a step of feeding said medium in said feed direction and a step of moving an ejection
head provided with said plurality of nozzles and ejecting liquid onto said medium are repeated a
predetermined number of times, and then ejection of liquid onto said medium is ended.

4. (cancelled).

5. (currently amended): A liquid ejection control method for controlling ejection of
liquid from nozzles arranged in a predetermined feed direction, the nozzles for ejecting liquid
onto a medium that is fed in said feed direction, comprising the following steps:

a step of detecting a portion of said medium that is positioned on an upstream side in said
feed direction; and

a step of making a nozzle located most upstream in said feed direction, and nozzles
within a predetermined distance in the feed direction from the most upstream nozzle, not eject
liquid based on a result of said detection;

wherein said predetermined distance is increased in correspondence with an increase of
an aggregate paper feed amount of said medium after said portion of said medium that is

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positioned on the upstream side in said feed direction has been detected;~~A liquid ejection control method according to claim 1,~~

wherein the paper feed amount of said medium is increased after said portion of said medium that is positioned on the upstream side in said feed direction has been detected,¹ and

wherein said predetermined distance is an amount obtained by subtracting a predetermined amount from said aggregate paper feed amount.

6. (original): A liquid ejection control method according to claim 5,

wherein, the higher a detection precision for detecting said portion of said medium that is positioned on the upstream side in said feed direction is, the smaller said predetermined amount is.

7. (original): A liquid ejection control method according to claim 6,

wherein said portion of said medium that is positioned on the upstream side in said feed direction is detected by determining whether or not an end, among ends of said medium, positioned on the upstream side in said feed direction has passed a predetermined position in said feed direction.

8. (original): A liquid ejection control method according to claim 7,

wherein whether or not said end, among the ends of said medium, positioned on the upstream side in said feed direction has passed said predetermined position in said feed direction is determined by determining whether or not said medium is present in a direction of travel of

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light that is emitted from a light emitting member for emitting light toward a medium support section, based on an output value of a light-receiving sensor for receiving the light that has been emitted by said light emitting member.

9. (original): A liquid ejection control method according to claim 8,
wherein said light is emitted from said light emitting member toward a plurality of different positions in a main-scanning direction, each of said plurality of different positions being said predetermined position in said feed direction on said medium support section, and
wherein whether or not said medium is present in said direction of travel of said light is determined based on output values of said light-receiving sensor that has received said light having been emitted.

10. (original): A liquid ejection control method according to claim 9,
wherein, while making a moving member that is provided with said light emitting member and said light-receiving sensor and that can be moved in the main-scanning direction move in the main-scanning direction,
said light is emitted from said light emitting member toward the plurality of different positions in the main-scanning direction, each of said plurality of different positions being said predetermined position in said feed direction on said medium support section, and
whether or not said medium is present in said direction of travel of said light is determined based on the output values of said light-receiving sensor that has received said light having been emitted.

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11. (original): A liquid ejection control method according to claim 10, wherein said moving member is provided with said ejection head, and wherein, while making said moving member move in the main-scanning direction, said light is emitted from said light emitting member toward the plurality of different positions in the main-scanning direction, each of said plurality of different positions being said predetermined position in said feed direction,

whether or not said medium is present in said direction of travel of said light is determined based on the output values of said light-receiving sensor that has received said light having been emitted, and

liquid is ejected onto said medium from the nozzles provided in said ejection head.

12. (original): A liquid ejection control method according to claim 11, wherein liquid is ejected with respect to an entire surface of said medium.

13. (original): A liquid ejection control method according to claim 12, wherein said liquid is ink.

14. (currently amended): A liquid ejection control method according to claim 1, wherein said portion of said medium that is positioned on the upstream side in said feed direction is detected by determining whether or not said portion of said medium on the upstream side in said feed direction has passed a predetermined position in said feed direction, and

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~~wherein said predetermined distance is increased in correspondence with an increase of an aggregate paper feed amount of said medium to increase a number of said nozzles that are made not to eject said liquid, and~~

wherein, if the number of said nozzles that are made not to eject said liquid exceeds a number of predetermined nozzles among said plurality of nozzles, then the operation for ejecting liquid onto said medium is ended.

15. (original): A liquid ejection control method according to claim 14,

wherein when it is determined that said portion of said medium on the upstream side in said feed direction has passed a predetermined position in said feed direction, liquid is not ejected from nozzles other than said predetermined number N of nozzles among said plurality of nozzles.

16. (cancelled)

17. (currently amended): A liquid ejection control method for controlling ejection of liquid from nozzles arranged in a predetermined feed direction, the nozzles for ejecting liquid onto a medium that is fed in said feed direction, comprising the following steps:

a step of detecting a portion of said medium that is positioned on an upstream side in said feed direction; and

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a step of making a nozzle located most upstream in said feed direction, and nozzles within a predetermined distance in the feed direction from the most upstream nozzle, not eject liquid based on a result of said detection;

wherein said predetermined distance is increased in correspondence with an increase of an aggregate paper feed amount of said medium, after said portion of said medium that is positioned on the upstream side in said feed direction has been detected, to increase a number of said nozzles that are made not to eject said liquid;~~A liquid ejection control method according to claim 16,~~

wherein said portion of said medium that is positioned on the upstream side in said feed direction is detected by determining whether or not said portion of said medium on the upstream side in said feed direction has passed a predetermined position in said feed direction;

wherein, if the number of said nozzles that are made not to eject said liquid exceeds a number of predetermined nozzles among said plurality of nozzles, then the operation for ejecting liquid onto said medium is ended;

wherein when it is determined that said portion of said medium on the upstream side in said feed direction has passed a predetermined position in said feed direction, liquid is not ejected from nozzles other than said predetermined nozzles among said plurality of nozzles;

wherein said predetermined nozzles are in opposition to a recessed section of a medium support section that is provided with said recessed section and that is for supporting said medium; and

wherein said predetermined distance is an amount that is obtained by subtracting a predetermined amount from said aggregate paper feed amount.

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18. (original): A liquid ejection control method according to claim 17, wherein, the higher a detection precision for detecting said position, in said feed direction, of said portion on the upstream side in said feed direction is, the smaller said predetermined amount is.

19. (currently amended): A liquid ejection apparatus for ejecting liquid onto a medium, comprising:

a plurality of nozzles, arranged in a predetermined feed direction, for ejecting the liquid;
a movable ejection head provided with said plurality of nozzles; and
a feed mechanism for feeding the medium in said feed direction;
a controller which,

based on a result of a detection of a portion of said medium that is positioned on an upstream side in said feed direction, makes a predetermined number N of nozzles eject liquid, from among a plurality of nozzles that are located in opposition to a platen;

wherein N is always greater than 0 and wherein N is decreased in accordance with an increase in a total feed amount of the medium after the portion of said medium that is positioned on the upstream side in said feed direction has been detected

~~-which are located most upstream in said feed direction and nozzles that are a predetermined distance in said feed direction from said most upstream nozzles not eject liquid therefrom, and~~

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~~increases said predetermined distance in correspondence with an increase of an
aggregate paper feed amount of said medium after said portion of said medium that is
positioned on the upstream side in said feed direction has been detected.~~